

**Ammonium Sulfate Conversion Feasibility Study
At Intermountain Power Plant**

**Action Items
Status as of September 2, 1999**

The following is a summary of the identified action items:

A. Tech Issues:

Outstanding:

- a) Provide DBA Chemical Information to permitting people (Jonas, 9/10/99)
- b) Determine annual quantity of DBA required (Jonas) ~~9~~ ~~4~~
- c) Identify potential sources for steam and hot water and identify locations for each (IPSC)
- d) Evaluate plant heat rate penalty and cost for supplying the steam and hot water (IPSC)

Completed:

- a) Produce mass balance and energy balance calculations – provided at 9/2/99 meeting (Jonas Klingspor)
- b) Process flow diagrams – provided at 9/2/99 meeting (Jonas Klingspor)
- c) Rough Equipment List – provided at 9/2/99 meeting (Jonas Klingspor)
- d) Power requirements – provided at 9/2/99 meeting (Jonas Klingspor)
- e) Rough layout – provided at 9/2/99 meeting (Jonas Klingspor)

B. Fuels issues:

Outstanding:

- a) Get pet coke samples from three LA refineries to IPA (Leslie Wilkinson, ASAP)
- b) Obtain pet coke specifications from suppliers (Leslie Wilkinson, ASAP)
- c) Receive petcoke lab results and forward them to appropriate people (IPSC, 9/30/99)
- d) Evaluate pet coke samples and appropriate blends of coal and pet coke for suitability at IPA by performing lab tests (IPSC, Due Date)
- e) Plan the test burn (Jerry Hintze, 9/10/99)
- f) Arrange transportation for pet coke required for test burn (IPA & Radian, Oct 99)
- g) Initiate review of backhaul opportunities and initial pricing info (IPA & Radian, Oct 99)
- h) Find which railroad services the Valmy Plant (Lance Lee, 9/17/99)
- i) Obtain additional information regarding IMC Chemical's train-set situation (Jon Finlinson, 9/10/99)

Completed:

- a) Contact and secure an appropriate lab to analyze petcoke samples (Jerry Hintzie)
- b) Determined that 20% Petcoke Blend is by heat input, not weight.

C. Ammonium Sulfate Issues:

Outstanding:

- a) Start AS market assessment (Leslie)
- b) Interview AS Brokers (Leslie)
- c) Determine local AS interest, distributors, and retail sales price (Jon Finlinson, 10/4/99)
- d) Determine if there is a Utah product quality specification and if so, what are the specifications (Jon Finlinson, 10/4/99)
- e) Determine if other States have a product quality specification and if so, what are the specifications (Leslie, 10/4/99)

Completed:

D. Anhydrous Ammonia Issues:

Outstanding:

- a) Review the Risk Management Plan for changes regarding anhydrous ammonia (IPSC, Due Date)
- b) Determine if ammonia suppliers will allow their railcars to sit at IGS for extended periods 30-60 days (Leslie Wilkinson, 9/17/99)
- c) Determine if local suppliers can provide ammonia during emergency situations (Jerry Hintzie)

Completed:

- a) Clarify annual amount of ammonia required – 66,000 tons per year. Rail cars contain 80 tons/car (Leslie Wilkinson)
 - b) Identify ammonia sources (Leslie Wilkinson)
- Based on 4% Petcoke @ 20%*

E. Permit Issues:

Outstanding:

- a) IPSC and DWP each wrote a memo regarding environmental issues in response to the SynGypAS presentations given by Radian. Patti Kimes has offered to review the memos and provide feedback (Patti Kimes, 9/17/99)
- b) Meet with Utah Division of Air Quality staff to brief them on Ammonium Sulfate project and our desire to conduct a test burn of petcoke at IGS (Patti Kimes)
- c) Fast track Notice of Intent to conduct test burn of petcoke to UDAQ (Jodean Giese, 9/99)
- d) Approach EPA regarding Petcoke test burn relating to mercury testing (Patti Kimes)

- e) Obtain mercury in petcoke information (Leslie Wilkinson)
- f) Submit Notice of Intent to change IGS' Approval Order (AO) [including New Source Review analysis/determination] (Jodean Giese, 1/00)

Completed:

- a) Review 40 CFR 60, Subpart PP, Standards of Performance for Ammonium Sulfate Manufacture, to determine compliance requirements – AS compliance requirements do not appear to apply (Rand Crafts)
- b) Determine all new equipment to be added to the facility as a result of the modifications; no other action items for this task until petroleum coke has been analyzed (Bill Horton)
- c) Determine if there are any landfill issues – there don't appear to be any (Rand Crafts)

F Other Items

Outstanding:

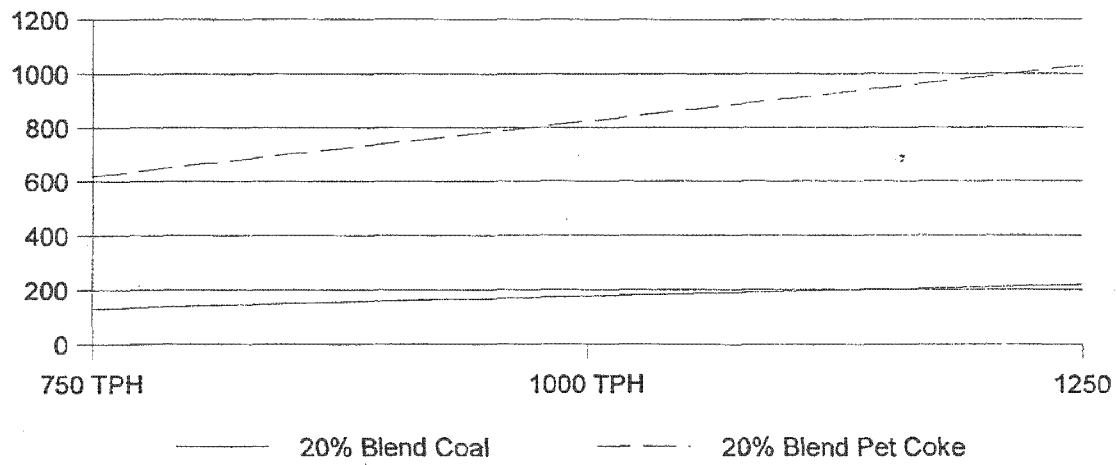
- a) Provide feedback to Leslie regarding draft feasibility study schedule (all parties, 9/17/99)
- b) Check IPA Board Meeting dates (Lance Lee, 10/4/99)
- c) Check Radian Board Meeting dates (Leslie Wilkinson, 10/4/99)

Completed:

*Cocaine Com
11.2.2*

*Ash Mono Fine
Inert Methods* *common than AS+1
unburnt*

Pet Coke Blending Rates



Air Permitting Issues on SynGypAS

- NSPS should not be an issue with these caveats:
 - Scrubber modification considered at least as beneficial
 - EPA considers primary function of change to reduce air pollutants
 - No increase in emission rates
 - EPA doesn't force issue to bring IGS to 0.15 lb/MMBtu limit because it may consider pet coke as alternate fuel automatically a major modification
- Re-Rating is not an issue under NSPS or PSD because:
 - NSPS allows increased production with no capital expense
 - PSD allows increased production if not prohibited by permit
 - Previous limit of 8.352×10^9 Btu heat input removed and not applicable
 - When it did apply, 8.352×10^9 Btu heat input relates to 905-922MW
- Permitting has several points to consider:
 - Being creative to hurry permitting through can backfire
 - Formal federal review should be requested through petition of applicability
 - Backdoor enforcement climate at federal level calls for caution
- PSD/NSR can be very restrictive if applicable:
 - BACT applied
 - Netting out emissions may be precarious to prove later
 - HAPs & Ammonia must be considered
 - Good basis for working out of PSD/NSR, BUT...
 - EPA may force issue through backdoor enforcement actions
- Other considerations and ramifications:
 - RMP for ammonia
 - Ammonia slip
 - Future applicability of HAPs MACT before project completion
 - Fugitive ammonia emissions
- Environmental issues can be further explored in a test burn if performed:
 - Stack tests (Metals, HAPs, Acid Gases, etc)
 - Variable operating parameters that affect emissions

Summary of Dames & Moore / Radian Meeting, White Paper, & Discussion

- Issues with NSPS:
 - Our reasons that NSPS is not applicable somewhat differ
 - Pet coke as alternate fuel not always exempted (and may not be in this case)
 - 0.15 lb/MMBtu standard in question for now

- Sleeping Dogs:
 - Re-Ratings appear to be non issues based upon exemptions.
 - 8.352×10^9 Btu heat input limit not applicable, nor needs to be
 - Title V supplanted AO's; Previous AO's no longer applicable - Limits

- Permitting and PSD:
 - Formal petition of applicability to EPA should be submitted
 - Can't ignore federal involvement
 - Can't ignore other non-air permitting issues
 - Calculations for Actuals to future actuals in question
 - Impact of fugitives needs to be addressed
 - Current climate with EPA needs to be addressed (backdoor enforcements)
 - BACT determination may not be favorable
 - No need to alter previous AO's for project; AO's not applicable

- Other issues to be further explored:
 - HAPs and NESHAPS
 - Ammonia